

**EFFECT OF ALOE VERA EXTRACT ON EPISIOTOMY
WOUND AMONG POSTNATAL MOTHERS IN A
GENERAL HOSPITAL, KRISHNAGIRI.**

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A Dissertation submitted to
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EFFECT OF ALOE VERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS IN A GENERAL HOSPITAL, KRISHNAGIRI.

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EPISIOTOMY WOUND HEALING

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Abstract

An interventional study was conducted to assess the effectiveness of aloe vera extract on episiotomy wound among postnatal mothers. Quasi experimental one group post test design was used to conduct the study. 46 mothers were selected as samples conveniently. Aloe vera extract was applied two times a day for a period of 5 days during the postnatal period and ongoing assessment was done using Modified Southampton Wound Healing scale. The wound regeneration was interpreted on 5th postnatal day using Modified Bates Jensen wound score continuum. The result shows that there is a significant effect in progress of wound healing. Hence, it is concluded that aloe vera extract is found to be effective in faster wound healing.

Effect of Aloe vera Extract on Episiotomy Wound among Postnatal Mothers in a General Hospital, Krishnagiri.

Pregnancy is a creative and productive period in the life of women and the process of delivery is purely depends on mother and fetus, where the mother plays a major role in delivering the fetus. In order to deliver a baby safely the birth canal plays a vital role. The structure of birth canal varies from individual to individual, some may have thick vaginal tissues which may not dilate even after the application of fetal axis pressure. Hence, the incision is made in perineum to create a passage sufficiently during second stage of labour, so that the baby can be more easily delivered. This process is called Episiotomy.

According to Joan (2006) the term “Episiotomy” refers to the intentional incision of vaginal opening to hasten delivery or to avoid or decrease potential tearing. Episiotomy is the most common procedure performed in modern day obstetrics. In today’s statistics it was estimated that as many as 65 to 80% of mothers who deliver vaginally will have an episiotomy. This procedure is widely spreaded in India, America and Poland (Michael, 2008).

The episiotomy procedure was first described in 1742; it subsequently gained widespread acceptance, peaking in the 1920s. Sleep and colleagues demonstrated that the use of episiotomy during normal delivery resulted in few advantages for mothers in terms of preservation of integrity of pelvic floor, prevention of uterine prolapse, vaginal trauma and promotion of wound healing and comfort during postpartum period (Justin, Lappon & Dana, 2010).

The process of wound healing from episiotomy continues to be a problem for many postnatal mothers. To overcome this problem, Salcido and Richard in 2004 emphasized that, when the cost of medical treatment and care is soaring, alternative and complementary medicine came in existence to cover a wide variety of healing philosophical approaches which has been increased in healthcare industry today. Hence, the herbal care of mothers with episiotomy can be provided if the nurse and midwives realize the relevance of their case and potential impact of the advocated procedure in wound healing. Therefore, the goal is to promote the episiotomy wound healing without any complications.

The gel extracted from “Aloe vera” (a natural herbal plant) which is fresh, when applied on the episiotomy wound heals at faster rate due to the presence of 200 active components such as vitamins, enzymes, minerals, sugars, fatty acids and aminoacids. Hence, application of aloe vera extract plays a good remedy for the mothers in progress of wound healing with shortest time possible, minimal pain and increased comfort. Therefore, the aim of treating a wound by the researcher should either shorten the time required for healing or to minimize the undesired consequences.

1.1. NEED FOR THE STUDY

According to WHO the episiotomy is performed in an area that is abundant with bacteria, if the wounds are untreated the infection may extend deeper into tissues and make it difficult to treat with antibiotics alone. So, the care of episiotomy wound begins immediately after delivery and should include the combination of local wound care and pain management.

According to Douglas Mackay (2009), the episiotomy has become a routine procedure in modern obstetrics, as the perineal tearing will cause an increased risk of natural disease being vertically transmitted.

Boback describes the purposes of episiotomy as to

1. Prevent tearing of perineum
2. Minimize prolonged and severe stretching of muscles supporting the bladder or rectum
3. Reduce the duration of second stage
4. Enlarge the vagina

Komarcevic (2008) describes that Wound healing involves a complex series of interactions between different cell types, cytokine mediators, and the extracellular matrix. The phases of normal wound healing include hemostasis, inflammation, proliferation and remodeling. Each phase of wound healing is distinct, although the wound healing requires adequate blood supply and nutrients to be supplied at the site of damage, the overall nutritional status and health of mother influences the outcome of damaged tissues.

Wound care experts advocate a holistic approach for the wound patients that considers co-existing physical and psychological factors, including nutritional factors and disease states. In addition to this, proteins, vitamins and minerals are also needed to meet the metabolic demands which are made by inflammation and cellular activity in wound healing. In order to meet the efficacy in healing process, aloe vera extract has proved its excellence in tissue repair due to the presence of its biologically active

compounds which includes anthraquinones, saccharides and prostaglandins as well as other constituents like enzymes, aminoacids, vitamins and minerals.

Winter (2001) demonstrated that when dry dressings were applied to wounds they disrupt the healing process. To achieve the maximum wound healing rate, efficient cell migration at wound surface need to be encouraged and this is achieved by using moist wound dressing with the help of aloe vera extract application on episiotomy wound.

Dahanukar (2000) have been reported that in order to possess the pro-healing effects in healing many herbal remedies encourages blood clotting on wounds, fights infection and accelerates healing process. Plant or chemical entities derived from plant need to be identified and formulated for the treatment and management of wounds. The presence of prostaglandins and unsaturated fatty acids (gamma-linolenic acid) in aloe vera extract, influences on anti-inflammatory process and platelet aggregation (blood clotting at wound sites).

According to Bannerjee (2005), in order to provide the effectiveness in episiotomy wound healing, there are various treatment modalities have been commonly practiced which includes hot and cold application, sitz bath, infra-red therapy and application of procaine spirit. To compliment the effect in wound healing alternative therapies are now widely used in practice. Aroma therapies like application of lavender oil, rose oil, grape fruit and orange; herbal therapies like aloe vera which is a yellow coloured gel extracted from outer leaf helps to soften and soothen the skin by promoting the cell repair. Finally, it has proved its synergetic effect in minimizing

the duration of wound healing process and its application on episiotomy wound has gained insight to challenge for medical practice.

David (2002) undertaken a study to notice the mechanism of wound healing by aloe vera extract on episiotomy wound, which was identified that the application had encouraged the proliferation of fibroblasts by stimulating fibrosis, epithelisation and in formation of new blood vessels during the inflammatory phase. Around day 2 and 3 during the phase of proliferation the collagen gets embedded to give a good supply of essential nutrients and enhances the process of epithelization in faster rates. When the area is moist it elicits in the reduction of edema and redness. During the final phase the full thickness of epidermis is restored by proliferation and differentiation of epidermal cells is observed through the lysis of collagens. Hence, it was concluded that aloe vera have the essential properties in healing with minimal duration of 5 days.

Schmidt, Juliane, Greenspoon and Jeffrey (1991) conducted a study on episiotomy wound among 21 women to assess the effect of aloe vera extract in wound healing. The researcher evaluated the time interval required with and without aloe vera. The result revealed that wound treated with standard management healed with mean time interval of 12 to 14 days, where as those treated with aloe vera healed within 5 to 6 days. Hence, the researcher suggested that the use of aloe vera was associated with rapid wound healing compared with non-treatment group.

In over all view, aloe vera is a powerful healer that has been successfully employed for millennia. It acts as in the manner of a conductor, orchestrating many

biologically active ingredients to achieve the goal of wound healing. As, aloe vera extract can penetrate and anaesthetize the tissues, it acts as bactericidal, virucidal, fungicidal, anti-inflammatory agent and also acts as a fuel for proliferating cells. Due to its impressive activity by themselves, the number of different substances acting in concern serves to minimize the duration of episiotomy wound healing to 5 days and promotes comfort to mothers. Hence, the researcher took an effort to investigate the effect of aloe vera extract application on episiotomy wound among postnatal mothers.

1.2. STATEMENT OF THE PROBLEM

EFFECT OF ALOEVERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS IN A GENERAL HOSPITAL, KRISHNAGIRI.

1.3. OBJECTIVES

1.3.1. Assessment of episiotomy wound among post natal mothers.

1.3.2. Application of Aloe vera extract on Episiotomy wound among Post natal Mothers.

1.3.3. Assessment of Episiotomy wound after application of Aloe vera extract.

1.4. OPERATIONAL DEFINITION

1.4.1. Aloe Vera Extract

A gel extracted from Aloe vera (aloe. barbadensis) plant that contains wound healing substances.

1.4.2. Postnatal Mother

Mother who had undergone vaginal delivery with episiotomy and admitted in the Postnatal Ward of General hospital, Krishnagiri.

1.5. DEFINITION

1.5.1. Episiotomy

A surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labour (Dutta, 2006).

1.6. CONCEPTUAL FRAMEWORK

MODIFIED GENERAL SYSTEM THEORY

The general system theory was proposed by Ludwig von Bertalanffy in the year 1968. This theory was purely based on the elements to clinical nursing practice which includes philosophy, purpose, practice and art. The art of nursing includes understanding client needs and concern, developing goals and actions intended to enhance the ability and directing the activities related to nursing plan to prevent infection and complications. The components of this theory focus on three systems such as input, process and output. In this study, the researcher modified the plan according to the wound healing process on episiotomy.

INPUT

The nurse researcher identifies the mother who had undergone vaginal delivery with episiotomy during the immediate post natal period. After collecting the demographic data from the mother, the condition of episiotomy wound is assessed using Modified Southampton scale.

PROCESS

After the initial assessment of episiotomy wound using Modified Southampton scale, the nurse researcher applies aloe vera extract on episiotomy wound as per the procedure protocol. The procedure is performed two times a day (morning and evening) for a period of five days.

The process of wound healing comprises of four stages: haemostasis, inflammatory phase, proliferative phase and maturation phase.

Haemostasis

During the first day of post natal period the haemostasis is strongly achieved by the presence of lignon, saponin, prostaglandins and gamma - linolenic acid in aloe vera extract.

Inflammatory Phase

This phase is completed by the 3rd day of postnatal period due to the presence of mannose phosphate, vitamin A and C, aminoacids such as tryptophan and phenylalanine, salicylic acid, and fatty acids in aloe vera.

Proliferative Phase

In this phase the wound proliferation is successfully completed on 4th post natal day, due to the absolute presence of glucosamine, anthraquinones and zinc in aloe vera extract.

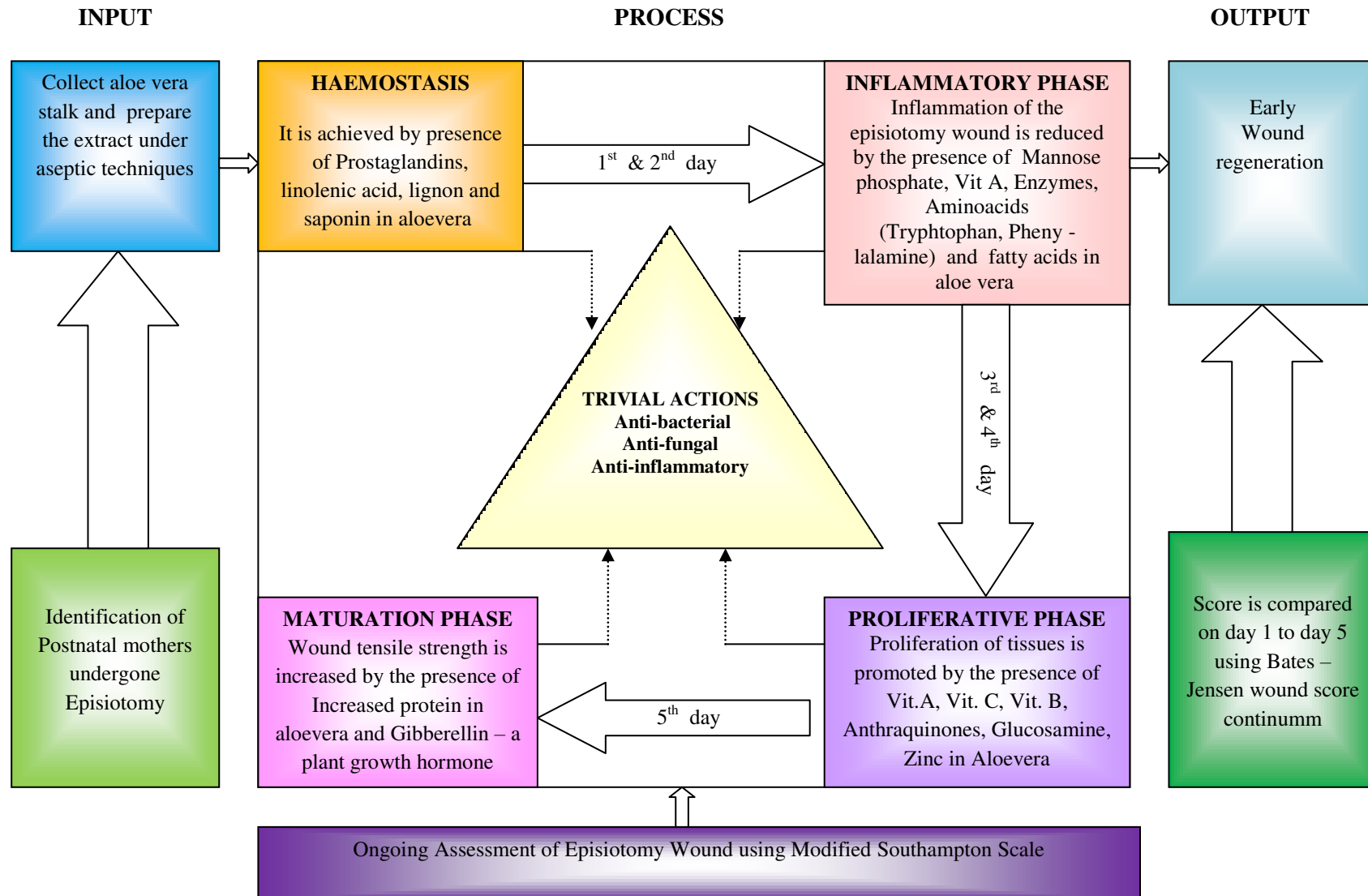
Maturation Phase

Finally, the maximum wound tensile strength is achieved by 5th day of postnatal period with the action of gibberellins - a plant growth hormone and high levels of protein in the aloe vera.

OUTPUT

After the application of aloe vera extract on 5th postnatal day, the wound regeneration is assessed using Bates Jensen wound score continuum and interpretations are made accordingly.

FIG. 1.1.
CONCEPTUAL FRAME WORK (LUDWIGVON AND BARTALANFFY'S GENERAL SYSTEM THEORY)



1.7. PROJECTED OUTCOME

Aloe vera extract application will improve the progress of episiotomy wound healing with shortest time possible, minimal pain and promotes comfort to the mother.

REVIEW OF LITERATURE

The present chapter discusses about the review of literature pertinent to the study. The literature review is discussed under the following headings.

2.1. Literatures related to episiotomy

2.2. Literatures related to episiotomy wound healing

2.3. Literatures related to Benefits of Aloe vera extract

2.4. Literatures related to the effect of aloe vera on episiotomy wound

2.1. LITERATURES RELATED TO EPISIOTOMY

Katharyn Antle Mary (1990) conducted a study and estimated that “Episiotomy” is the second most common surgical procedure performed in united states ranges to 65% in normal vaginal deliveries, among this 85% of women belongs to primigravida.

Mfuto Bengo (2009) conducted a study in India to identify the prevalence of episiotomy among 686 mothers who had undergone normal vaginal deliveries, reveals that 96.6% women had episiotomy and only 3.4% of women delivered without episiotomy. It was reported that among 96.6% mothers with episiotomy 68.1% mothers were primigravida and 28.5% were multigravida. The author correlated the statistical report with UK and US and reported that every year more than 200,000 mothers undergoes episiotomy, where the majority of women were primigravida. Hence, it was estimated that episiotomy is the second most common surgical procedure performed and has become the routine practice in obstetrics.

Chigbu, Onwere, Aluka, Kamanu and Adibe (2005) conducted a hospital based retrospective study to determine the prevalence of episiotomy among 4,172 mothers and to examine the factors influencing performance of episiotomy. The result revealed that 1,877 mothers underwent episiotomy at the rate of 45%, among these subjects 90% of mothers were primigravida parturients. It was also reported that women undergoing episiotomy were younger (Mean age is 24.7 with the range of 16 - 37 years) than women without episiotomy (Mean age is 28.5 with the range of 20 - 43 years). When controlled for parity and maternal age, other risk factors included were occipito-posterior position, vaccum extraction, forceps delivery, vaginal breech and previous history of caesarean section. This study concluded that greater attention needs to be paid to select women to undergo episiotomy.

Ratchadawan Sookilm et al., (2007) conducted a prospective cohort study among 1,302 women, who gave birth vaginally between April 2005 and February 2006 at Srinagarind hospital, Thailand, to compare the risk of perineal tear in midline and medio-lateral type of episiotomy. Of the 1,302 pregnant women studied, 426 mothers received midline incision and 876 mothers had medio-lateral incision. The report reveals that 14.8% of women had deep perineal tear in midline episiotomy, which is statistically significant compared to 7% in women who underwent medio-lateral episiotomy (P value < 0.05). Hence, it was concluded that the risk factor for deep perineal tear were higher with midline episiotomy, primiparity, maternal height less than 145 cms, fetal birth weight more than 3,500 gms and in forceps extraction.

Mary Guinness and Kathreen Nair (2005) conducted a comparative study between 181 women with episiotomy and 186 women with perineal tear to determine the outcome of wound healing during postnatal period. Perineal healing was higher in episiotomy group, where as 60% of mothers with perineal tear had associated with delayed perineal wound healing due to wound separation and clinical infection. Hence, it was suggested that episiotomy should be a routine in all hospitals and maternity centres to prevent laceration on perineum and to promote wound healing.

Sinerello (2000) conducted a study with 126 women, resulted that having an episiotomy may cause increased perineal pain in the postpartum period, trouble in defaecation, painful intercourse, itching during urination and discomfort to the mothers. Hence, he suggested that the appropriate wound care should help the mother in soothing the tissues of perineum and provide comfort to the mothers in terms of wound healing with shortest time possible.

2.2. LITERATURES RELATED TO EPISIOTOMY WOUND HEALING

Pravin Gupta (2007) conducted a study with 46 mothers to determine the therapeutic properties of sitz bath in episiotomy wound healing. The samples were randomly assigned to receive sitz bath twice daily and control group received routine wound care management. The study evaluated that the improvement score was higher in sitz bath group compared with control group. The researcher concluded that there is a significant relief in the burning sensation of episiotomy wound and marginally better satisfaction score with no report of adverse side effects in sitz bath.

Diane Rambler and Joyce Robert (1991) conducted a comparative study to identify the effect of cold sitz bath for relieving pain in the postpartum period after an episiotomy. Using random assignment 40 samples were selected for both cold and warm sitz bath, mother were rated the degree of perineal pain before and after each sitz bath at half-hour and one-hour intervals using a standard pain scale. A two way analysis of variance with replications showed that cold sitz bath were significantly more effective in relieving perineal pain. Hence, the greatest amount of pain relief was experienced immediately after cold sitz bath compared with warm sitz bath.

Tay, Soon and Choo (1999) conducted a randomized control trial to investigate the usefulness of local application of procaine spirit versus cleaning with water for care of episiotomy wound after normal vaginal delivery in 100 women. Among the subjects, 50 women entered study arm and 50 women entered the control arm with similar demographic and obstetric characteristics. The study reveals that by 14th postnatal day all the study group reported no pain and the site of episiotomy wound healed completely. It was observed that all women were maintained a high standard of perineal hygiene with a mean of 5 washes per day. Hence, the study concluded that in a women with episiotomy after a normal vaginal delivery, local application of procaine spirit is unnecessary in the care of routine episiotomy wound.

Pauline Chiarelli (2006) conducted a randomized controlled trial on 52 mothers who had episiotomy to assess the effectiveness of vitamin E in wound healing. The samples were randomly allocated for case and control group. Vitamin E was applied for 4 times a day from the immediate postnatal period and progress of wound healing was assessed using a standard scale. The result revealed that there was

statistically significant difference in the progress of wound healing in 10 days among the case group. This study concluded that there exist a faster healing in case group who received vitamin E when compared with control group.

Waelsworth and Chanmugan (1990) advocated the use of infra red radiation in the management of perineal edema after the episiotomy. They claimed that the use of infra red therapy on episiotomy wound causes the vaso-dilatation of blood vessels and encourages the increased rate of tissue fluid exchange to promote healing.

Dhanalakshmi (2008) conducted a comparative study in seethalakshmi maternity centre, Coimbatore to explore the effect of infrared therapy and sitz bath on episiotomy. Using the random assignment 30 mothers were studied, among the subjects 15 mothers were assigned for infrared therapy and 15 mothers for sitz bath intervention. Infrared and sitz bath were given for 15 minutes interval for two times a day for a period of 3 days and the progress of wound healing was assessed daily using Modified Southampton wound assessment scale. The study revealed that the wound regeneration and pain score was statistically significant using 't' test at 0.01 level by infrared therapy compared with sitz bath group. Hence, the researcher suggested that infrared therapy could be effective for the mothers with episiotomy in wound healing.

Katayon Vakilian (2006) conducted a randomized control study with 120 primiparous women who had undergone normal vaginal delivery with episiotomy to assess the effect of lavender oil on wound healing. The case group received lavender oil and controls received povidine iodine, which was found that there was no significant difference between two groups in surgical site complications. However, the redness in episiotomy wound was significantly less than the control ($p < 0.001$).

Thus, it was suggested that application of lavender oil on episiotomy wound promotes comfort to the mothers.

Cunningham (2001) designed a clinical trial to verify the effect of aroma therapy on episiotomy wound among postnatal mothers. The methods of aromatherapy were applied sitz bath or soap application using essential oils with lavender, rose, grapefruit, orange and chamomile. The subjects were allocated to one of three groups; the aroma – sitz bath group, aroma soap application group or control group. The healing status were evaluated using REEDA scale. The report reveals that the REEDA scale was significantly low in experimental group at 5th and 7th postnatal day ($p = 0.009$, $p = 0.003$), respectively than the control group. Hence, the findings indicated that postpartum aroma therapy for perineal care could be effective in healing the perineum.

2.3. LITERATURES RELATED TO BENEFITS OF ALOE VERA EXTRACT

Douglas Mackay (2004) describes that, aloe vera is a powerful herbal healer, also known as “lily of the desert”, “ plant of immortality”, and a “medicinal plant” dates back to the 6th century B.C. The name was derived from arabic “alloeh” meaning “bitter”. In 1500 B.C Egyptians recorded that the herbal plant advocates in treating the infections and parasites with topical applications. The plant consists of 96% water, the rest of it contains active ingredients including essential oil, aminoacids, minerals, vitamins, enzymes, and glycoproteins. As, it has been used as a modern healer since 1930’s, it is considered safe on its external application.

Levescy (2008) published 200 world wide scientific papers on 250 episiotomy wounds to show the effect of aloevera on its properties, which had revealed that it has 100% resolution in each individuals with its external applications.

Grace, Simmonds, Smith (2001) proved the therapeutic uses of aloe vera in many samples with surgical wounds and injuries. Over 350 multidisciplinary publications were undertaken on effectiveness of aloe vera extract in order to spread the information world wide.

Hu and Xu (2003) conducted a comparative study in 1 year, 2 year and 3 year old aloe vera plant to evaluate anti-oxidant properties and the concentration levels of polysaccharides in of aloe vera extract. The result reveals that 2 and 3 year old aloe vera contains higher levels of polysaccharides and exhibited the strong radical scavenging activity of 72.19% compared to 1 year old plant. These data suggested that the growth stage plays a vital role in the composition as well as anti-oxidant activity in aloe vera.

Gary et al., (2004) conducted a study on 45 surgical wounds to identify the effectiveness of wound healing by aloe vera, which revealed that the aloe vera had a property to penetrate and anaesthetize tissues. By action of its anti-bacterial, anti-virucidal, anti-fungicidal property and anti-inflammatory response it has served to be a stimulant in its effectiveness.

Davis, Laitner, Russo, Bryne (2003) conducted a comparative study in traumatic and surgical wounds to assess the effectiveness on topical applications with aloe vera extract. The results revealed that aloe vera heals faster due to the facts that

contains not only the presence of vitamin E, C and zinc, it is because of higher levels of polysaccharides enhanced in reducing inflammation and fibroblastic activity for repairing wounds. Hence, it was concluded that the wound healing was far faster with aloe vera application than other wounds not treated.

Vogler and Ernst (1999) conducted a prospective, randomized and controlled study among 40 women in post gynaecological surgical wound to assess the wound healing with application of aloe vera. Among these 22 subjects received aloe vera extract on surgical wound and 18 subjects received polyethylene oxide wound gel for two times a day. The study revealed that by day 6, 90% of wounds were healed with complete re-epithelization with aloe vera compared with 40-50% without aloe vera application. Hence, the researcher concluded that wound healing was 72 hours faster with aloe vera treatment than the wounds treated with polyethylene oxide gel.

Gowda, Neelisiddaiah and Anjuneyalo (2001) conducted a study to demonstrate the excellent properties in original aloe vera compared with aloe vera cream (Commercial preparation). The study revealed that aloe vera acts as a stimulatory system in which it can increase antibody production and stimulate wound healing due to the presence of growth factors such as gibberellins, auxin and mannose phosphate. The isolation of wound healing and anti-inflammatory activities was done using 50% ethanol extraction of aloe vera revealed that the supernatant contained 78% of anti-inflammatory activity where as, the precipitate had only 32%. On the other hand, the supernatant had 0% wound healing activity and the precipitate had 160% of wound healing activity in reference to the original aloe vera. This 160% value is likely due to the fact that anti-inflammatory activity is masking some of wound

healing effect seen in original aloe vera. Hence, this study concluded that original aloe vera is far effective in wound healing than the commercial preparations.

2.4. LITERATURES RELATED TO EFFECT OF ALOE VERA ON EPISIOTOMY WOUND HEALING

Dementia Clark (1999) conducted a comparative study in 106 mothers undergone vaginal delivery to investigate the rate of wound healing with aloe vera extract application on episiotomy wound compared with perineal tear. A convenient sample was adapted to select the subjects for study. Among these subjects 53 mothers with perineal tear and 53 mothers with episiotomy were included for the interventions respectively (application of aloe vera extract for two times a day). The report revealed that the time taken for healing on episiotomy wound was only 5 days compared with perineal tear, where it was 8 days. It was also reported that the time taken to heal in 3rd degree perineal tear was markedly higher i.e., 12 days. Hence, these data suggested that the application of aloe vera extract is highly effective in episiotomy wound compared with perineal tear in terms of rapid wound healing with shortest time possible and without scarring.

Choi, Soo, Park, Lee and Chay (2001) conducted a laboratory study to characterize the component effective in wound healing by aloe vera. By using electrophoresis method glycoproteins were fragmented from the aloe vera extract. The result revealed that there exist a higher level of glycoprotein in aloe vera, which is the important source in formation of epidermal tissues. So, it was considered that the presence of glycoprotein substance enhances the surgical wound healing effect of aloe vera via cell proliferation and migration. Hence, the researcher suggested that it could

be effective to use a broader spectrum application of aloe vera in treating chronic wounds, surgical wounds and perineal wounds including episiotomy wound.

Maenthaisong, Chaikyakunapruk (2007) conducted a systematic review to determine the efficacy of topical aloe vera application for the treatment of episiotomy wound. With the support of relevant studies in Medline, CINAHL, Cochrane library, only controlled trials for wound healing were included. Two reviewers independently extracted data on characteristics, intervention and outcome measure. 4 studies with a total of 371 patients were included in this review. Based on a meta analysis using duration of wound healing as an outcome measure, the summary weighted mean difference in healing time of aloe vera group as 5 days shorter than those in control group ($p = 0.006$). Hence, these cumulative evidence tends to support that aloe vera might be an effective intervention used in episiotomy wound healing.

Visuthikosol et.al., (2008) conducted a clinical study in 27 mothers with episiotomy in Ramathibodi hospital, Thailand, to assess the effectiveness of aloe vera extract in terms of wound healing. The wounds treated with aloe vera extract were compared with Vaseline gauze. The report revealed that the average time taken for healing with application of aloe vera was only 5 days and 12 days for Vaseline gauze treated wound. Using 't' test the value obtained ($p < 0.002$) was statistically significant in aloe vera treated group. The researcher observed only some minor discomfort and pain were encountered in 27 cases. Therefore, the result concluded that aloe vera has a dramatic effect in wound healing faster than Vaseline gauze application. So, the researcher suggested that it might be beneficial to do further trials on infected wounds.

Kaufman, Kulderon, Ullmann and Berger (1998) conducted a quantitative controlled study in 74 postnatal mothers with episiotomy to evaluate the rate of wound healing by aloe vera extract. Using a randomized control trial 38 samples in experimental group received aloe vera extract, where as 36 samples in control group received povidene iodine cream. The result revealed that epithelization and thickness of newly formed granulation tissue was significantly higher ($p < 0.01$) in aloe vera treated group during 3rd, 4th and 5th postnatal day when compared with povidine iodine treated wounds. Hence, the researcher concluded that the application of aloe vera extract speeds the healing process in episiotomy wound.

METHODOLOGY

This chapter describes the research methodology adapted to assess the effect of Aloe vera extract on episiotomy wound among postnatal mothers in a General hospital, Krishnagiri. The methodology of the present study includes research approach, research design, setting, population, criteria for sample selection, sampling technique, variables of the study, development and description of tools and technique of data analysis and interpretation.

3.1. RESEARCH APPROACH

The present study aimed at application of aloe vera extract among postnatal mothers with episiotomy wound and to determine its effectiveness. Hence, a quantitative approach was considered appropriate to determine the effectiveness of aloe vera extract.

3.2. RESEARCH DESIGN

The research design adopted to carryout the present study was quasi experimental one group post test only design. This design was found to be appropriate to identify the effectiveness of aloe vera extract in the progress of wound healing.

3.3. RESEARCH SETTING

The study was conducted in Government Head Quarters Hospital, Krishnagiri, Tamilnadu. It is a 350 bedded hospital, which comprises of 35 beds in Antenatal and Postnatal ward. There are 12 delivery beds in labour room. There are about 450 deliveries conducted per month.

3.4. POPULATION

Total number of deliveries conducted in Government Head Quarters Hospital during the last year was 4, 928 and total number of deliveries conducted for the month of June 2010 was 410. The mothers who have undergone normal vaginal delivery with episiotomy were considered as accessible population.

3.5. CRITERIA FOR SAMPLE SELECTION

3.5.1. Inclusion criteria

Mothers who have undergone vaginal delivery with episiotomy were included for the study.

3.5.2. Exclusion criteria

1. Mothers who have vaginal infections
2. Mothers with perineal tear
3. Mothers with diabetes / hypertension
4. Mothers with sexually transmitted diseases
5. Mothers allergic to aloe vera
6. Mothers with severe anaemia

3.5.3. Sampling

Convenient samples of 46 post natal mothers were selected for the study. Their age group ranges from 19 – 30 years.

3.6. VARIABLES UNDER THE STUDY

3.6.1. Independent variable

Application of aloe vera extract on episiotomy wound

3.6.2. Dependent variable

The progress of episiotomy wound healing.

3.7. TOOLS FOR THE STUDY

3.7.1. Demographic Data Profile

The baseline data profile comprises of socio demographic data, obstetrical data, medical history and personal history.

3.7.2. MODIFIED SOUTHAMPTON WOUND HEALING SCALE (Adapted from Gottrup, 1990)

This scale is made to score the episiotomy wound, which includes the components such as, normal healing process, healing with bruising / ecchymosis, healing with edema, erythema with signs of inflammation, clear / serosanguinous discharge, major complications like pus, deep or severe wound infection. The maximum score is 19.

The progress of wound status was assessed by Modified Bates - Jensen wound score continuum. The scale has two ends, where less score indicates wound regeneration and high score indicates wound degeneration.

3.7.1. Interventional Procedure

3.7.1.1. Procedure For Aloe vera Extract Application On Episiotomy Wound

1. Selection of Aloe vera

A dark green stalk of aloe vera. barbadensis (bottom or midportion) which is 2-3 years old is selected for application.



Aloe vera barbadensis

2. Preparation of Aloe vera

- a. Cut the stalk of aloe vera and secure in a clean cloth.
- b. Arrange all articles at bed side.

3. Articles

A tray containing

1. Stalk of aloe vera
2. Sterile knife
3. Sterile bowl
4. Sterile gloves
5. Normal saline
6. Sterile gauze pieces
7. Kidney tray
8. Mackintosh
9. Sanitary pads



Aloe vera barbadensis

4. Procedure

Step 1: Wash aloe vera stalk under running water

Step 2: Remove the skin of aloe vera and scrap the aloe vera gel using sterile knife and place in a sterile bowl

Step 3: Wear gloves and apply a small quantity of gel on the back of the ears and wait for 5 to 7 minutes for any sign of itching and redness.



Step 4: Wear gloves and clean the perineum with normal saline and dry with gauze piece.

Step 5: Apply aloe vera gel on the episiotomy wound and cover the whole edges.

Step 6: Wait for 2 minutes and secure the wound with sanitary pads.

3.8. VALIDITY OF TOOL

Modified Southampton wound healing scale was adapted by Gottrup, 1990. The content validity index of the scale is 0.91 and yielded high predictive validity. Inter rater reliability was found to be high which is $r = 0.91$ (Williams & Wilkins 1992).

3.9. HYPOTHESIS

There will be a significant progress in the episiotomy wound healing after application of aloe vera extract.

3.10. PILOT STUDY

Prior to the main study, pilot study was conducted to check the feasibility, practicability, validity and reliability of the tool. The study was conducted in Government Head Quarters Hospital, Krishnagiri, Tamilnadu. The data collection was done for a period of 10 days. Convenient sample of 11 subjects were selected for the study. After the initial assessment of episiotomy wound using Modified Southampton Scale aloe vera extract was applied for two times a day (morning and evening) for a period of five days during the postnatal period. The progress of wound healing was assessed before each application and the wound regeneration was assessed on the fifth day using Bates Jensen wound score continuum. The mean score in day 1 was 3.8,

compared with the final day score of 0.09. Hence, the application of aloe vera extract on episiotomy wound was proved its effectiveness in enhancing the progress of wound healing.

3.11. MAIN STUDY

The main study was conducted to meet the objectives of the present study. The data was collected for a period of 30 days in Government Head Quarters Hospital, Krishnagiri from June 2010 to July 2010. A convenient sample of 46 postnatal mothers with episiotomy were selected for the study. After the initial assessment of episiotomy wound using Modified Southampton Scale aloe vera extract was applied for two times a day (morning and evening) for a period of five days during the postnatal period. The progress of wound healing was assessed before each application and the wound regeneration was assessed on the fifth day using Bates Jensen wound score continuum.

3.12. TECHNIQUES OF DATA ANALYSIS

Appropriate statistical tool such as descriptive and inferential statistics were applied to analyse the data.

DATA ANALYSIS AND INTERPRETATION

The present chapter deals with the method of data analysis and interpretation.

The study intended to find out the progress of episiotomy wound healing with the application of aloe vera extract among post natal mothers. The study was conducted in a Government Head quarters Hospital, Krishnagiri. A total of 46 samples were enrolled in this study. Episiotomy wound was assessed and aloe vera extract was applied to selected postnatal mothers.

The data collected were grouped and analysed using descriptive and inferential statistical methods and presented in the form of tables and figures.

SECTION I

4.1. BASELINE DATA PRESENTATION

The socio demographic characteristics, obstetrical data and personal informations were assessed based on the variables. These influence were analysed to note the progress of wound healing.

TABLE 4.1.
AGE DISTRIBUTION OF POSTNATAL MOTHERS

Age (in years)	Number of samples	Percentage (%)
19 – 22	27	59
23 – 26	14	30
27 – 30	5	11
Total	46	100

The table on age distribution reveals that about 59% of postnatal mothers belongs to the age group of 19 - 22 years, where as about 30 % of mothers were between 23 – 26 years of age and 11 % were between 27 - 30 years of age.

FIG. 4.1.
AGE DISTRIBUTION OF POSTNATAL MOTHERS

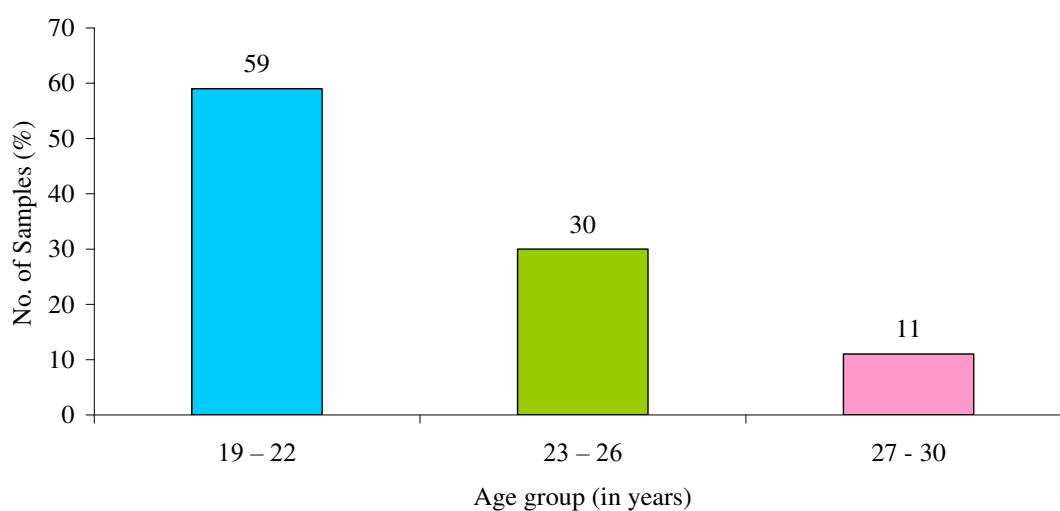


TABLE 4.2.
DISTRIBUTION OF GRAVIDA STATUS AMONG
POSTNATAL MOTHERS

Gravid status	Number of samples	Percentage (%)
Primi gravida	17	37
Multigravida	29	63
Total	46	100

The above table reveals that the majority 63% of mothers were multigravida, where as about 37 % of mothers were primigravida.

FIG. 4.2.
DISTRIBUTION OF GRAVIDA STATUS
AMONG POSTNATAL MOTHERS

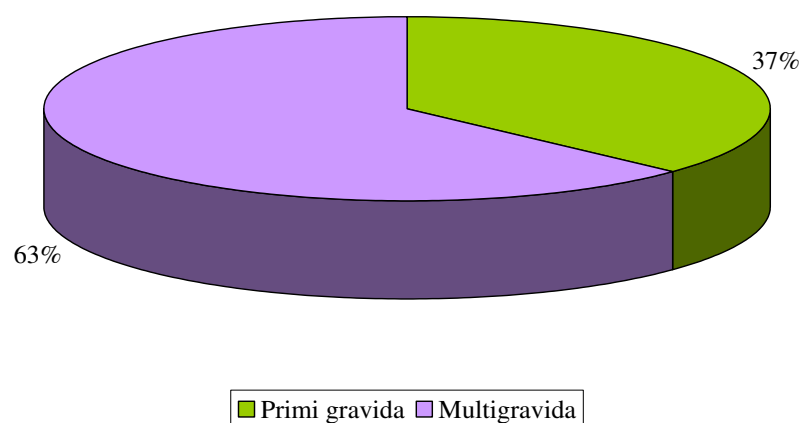


TABLE 4.3.
DISTRIBUTION OF EDUCATIONAL STATUS
OF POSTNATAL MOTHERS

Educational status	Number of samples	Percentage (%)
Illiterate	3	6
Primary	3	6
Secondary	38	83
Graduate	2	5
Total	46	100

The table shows about 83 % of mothers had secondary education, where as about 6% were illiterate and had primary education respectively. About 5% of mothers were graduates.

FIG. 4.3.
DISTRIBUTION OF EDUCATIONAL STATUS
OF POSTNATAL MOTHERS

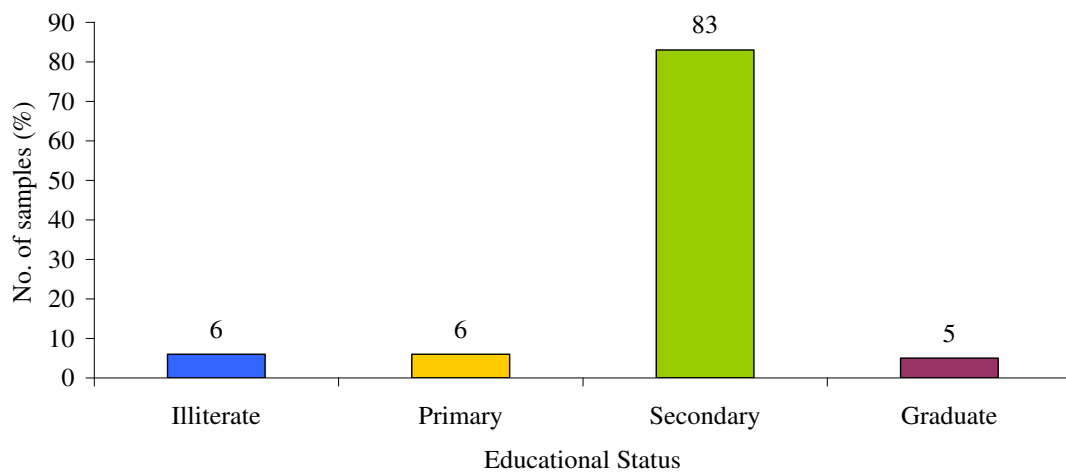


TABLE 4.4.
DISTRIBUTION OF GESTATIONAL
AGE OF POSTNATAL MOTHERS

Gestational age in weeks	Number of samples	Percentage (%)
37 – 39	30	65
40 – 42	16	35
Total	46	100

The above table reveals that about 65% of women delivered between 37-39 weeks of gestation and about 35% of women delivered between 40 - 42 weeks of gestation.

FIG. 4.4.
DISTRIBUTION OF GESTATIONAL AGE OF
POSTNATAL MOTHERS

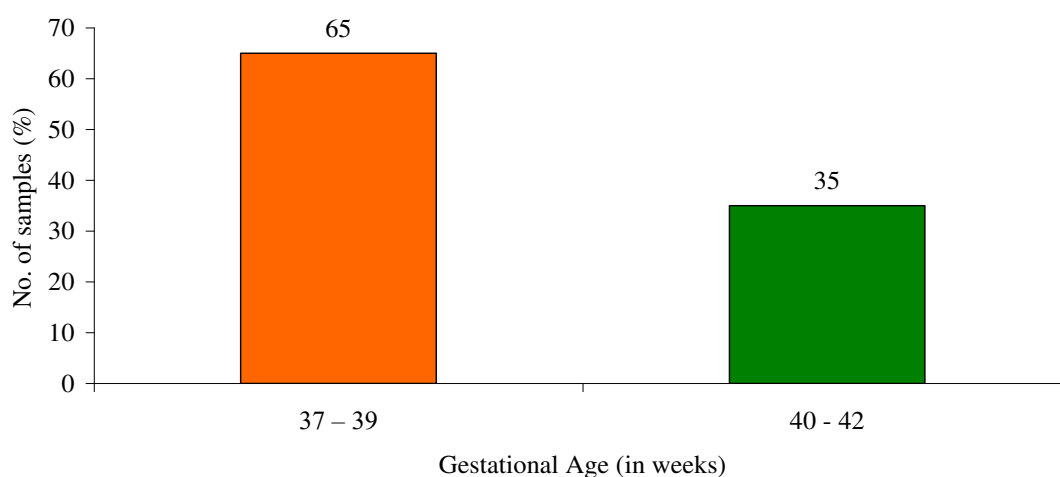


TABLE 4.5.
DISTRIBUTION OF WEIGHT OF POSTNATAL MOTHERS

Weight in kilograms	Number of samples	Percentage (%)
46 – 50	11	24
51 – 55	12	26
56 – 60	16	35
61 – 65	07	15
Total	46	100

The table reveals that, majority of the post natal mothers 35% weighs between 56 – 60 kgs, 26% of mothers were between 51 – 55 kgs, about 24% of mothers weighs between 46 – 50kgs, where as about 15% of mothers were between 61 – 65 kgs.

FIG. 4.5.
DISTRIBUTION OF WEIGHT OF POSTNATAL MOTHERS

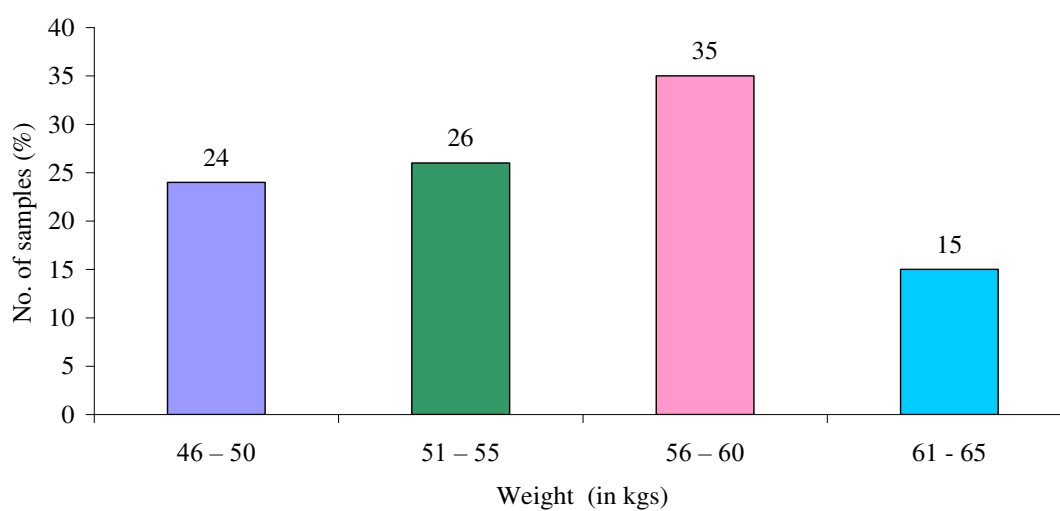
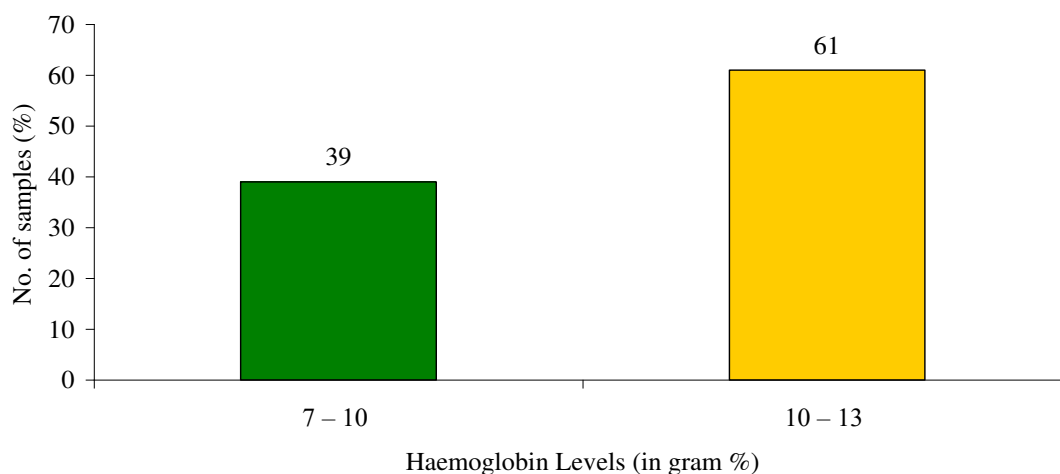


TABLE 4.6.
DISTRIBUTION OF HAEMOGLOBIN
LEVELS OF POSTNATAL MOTHERS

Haemoglobin in gram %	Number of samples	Percentage (%)
7 – 10	18	39
10 – 13	28	61
Total	46	100

The above table shows that about 61% of mother's haemoglobin level was between 10 – 13 gms% and about 39% had between 7 – 10 gm%.

FIG. 4.6.
DISTRIBUTION OF HAEMOGLOBIN LEVELS OF
POSTNATAL MOTHERS



SECTION - II

4.2. ANALYSIS ON PROGRESS OF WOUND HEALING

Paired 't' test was calculated to find out the progress of wound healing by aloe vera extract on episiotomy.

TABLE 4.7.
ANALYSIS ON PROGRESS OF WOUND HEALING

(N = 46)

Wound healing score	Mean	Standard deviation	Mean percentage	Mean difference	't'
DAY 1	10.15	1.889	53.42		
Day 5	0.65	1.681	3.42	49.99	18.277**

**** Significant at 0.01 Level**

The mean score of mother during the initial assessment of episiotomy wound was 10.15 and it was decreased to 0.65 on day 5. This proves that the intervention has shown the positive difference in wound healing.

The calculated 't' value 18.277 was compared with the table value 2.326 at 45th degrees of freedom with 0.01 level of significance. The calculated value was much higher than the table value. Thus, there is a significant progress in the episiotomy wound healing. Hence, hypothesis was accepted.

SECTION – III

4.3. RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLE AND PROGRESS OF WOUND HEALING SCORE

Karl Pearson's co-efficient of correlation was calculated to find out the influence of selected demographic variable on progress of wound healing after application of aloe vera extract on episiotomy wound.

TABLE 4.8.
INFLUENCE OF DEMOGRAPHIC VARIABLE ON
PROGRESS OF WOUND HEALING

Demographic variables	'r' value
Gravida status	0.792
Weight	0.624

The above result reveals that there exists a positive correlation between gravida status, weight and episiotomy wound healing. Hence, it indicates that the duration of episiotomy wound healing is influenced by gravid status and weight of the postnatal mothers.

RESULTS AND DISCUSSION

This chapter deals with the interpretation of the results, discussion of findings and limitations of the study. The study was conducted at Government Head Quarters hospital, Krishnagiri. The main focus of the study was to assess the effect of aloe vera extract on episiotomy among postnatal mothers.

46 mothers who have undergone vaginal delivery with episiotomy were studied and demographic data's were recorded.

5.1. FINDINGS RELATED TO DEMOGRAPHIC DATA

Gravida Status

In this study majority of mothers (63%) were multi gravida, where as 37% of mothers were primigravida. The result revealed that multi gravida mothers had complete wound healing on 4th day, where as primi mothers had complete wound healing on 5th postnatal day.

The result is in line with the study conducted by Mary guiness and Kathreen nair (2005) revealed that parity exhibits a significant relationship with perineal healing and reported that multi gravida mothers had faster wound healing when compared with primi mothers.

Weight

In this study majority of mothers (76%) weighs between 51 – 65 kgs, where as 24% of mothers weighs between 46 – 50 kgs. The result revealed that the progress of wound healing was faster with mother weighs 51 – 65 kgs compared with mothers

weighs between 46 – 50 kgs. Hence, the nutritional status has the influence in the progress of wound healing. This result is substantiated with the description of Komarecevic (2008), explains that each phase of wound healing is distinct, although the wound healing requires adequate blood supply and nutrients to be supplied to the site of damage, the overall nutritional status and health of the mother influences the outcome of damaged tissues.

5.2. FINDINGS RELATED TO EPISIOTOMY WOUND HEALING

The result reveals that, the mean score during day 1 was 10.15 with mean percentage 53.42 and standard deviation obtained on wound assessment is 1.889. Where as, during day 5 the mean score obtained was 0.65 with mean percentage 3.42 and standard deviation was 1.681.

The result revealed from a study conducted by Maenthaisong and Chaiyakunapruk (2007) goes along with the present findings. In that study the mean difference of wound score in aloe vera group was significantly less, which is associated with a progress of wound healing as an outcome measure. The present study revealed that the mothers had a significant progress in wound regeneration by the application of aloe vera extract.

The study substantiated with the findings of the study conducted by Visuthikosol et al., (2008) which reported that there is a faster wound healing ($p < 0.002$) within 5 days duration with aloe vera extract on episiotomy wound.

The result is in line with the study conducted by Kaufman, Kulderon, Ullmann & Berger (1998) reported that the epithelization and thickness of newly formed

granulation tissue was significantly higher ($p < 0.01$) in aloe vera treated group on episiotomy wound.

The result is in line with the study conducted by Gary et al., (2004) identified that aloe vera has a property to penetrate and anaesthetize tissue. By the action of its anti-bacterial, anti-virucidal, anti- fungicidal property and anti-inflammatory response it has served to be a stimulant in its effectiveness. The present study, revealed that during the 3rd postnatal day the inflammation of the episiotomy wound was reduced, which was observed using the wound assessment scale. All the mothers expressed their satisfaction after the application of aloe vera extract.

SUMMARY AND CONCLUSION

The major focus of the study is to assess the effect of aloe vera extract on episiotomy wound among postnatal mothers. “Women health care is more than a reproductive health care”. To understand women health care, practitioner must view women holistically as the complications on episiotomy wound has remarked higher among post natal mothers. Effective postnatal care by the nurse midwife play a vital role in preventing complications. In order to minimize the discomfort for mother’s in terms of wound healing, alternative and complementary therapy now came in existence to improve the wound healing with shortest time possible, minimal pain and reduce discomfort to mother.

The conceptual framework of the study was based upon Ludwig von Bertalanffy’s General System Theory (1968).

The present study was conducted at Government Head Quarters Hospital, Krishnagiri. A quasi experimental post test only design was adopted and convenient sampling technique was used to select post natal mothers for the study. Total number of mothers selected for the study was 46.

The procedure for application of aloe vera extract was explained to the mothers and obtained informed consent. The demographic data and obstetrical history was collected by interview and observation method. According to procedure protocol, the condition of episiotomy wound was assessed before and after the intervention using Modified Southampton Wound assessment scale. The intervention was carried

out for two times a day for a period of five days during postnatal period. The wound regeneration was assessed using Bates Jensen wound score continuum.

The study resulted that application of aloe vera extract on episiotomy wound was more effective in the progress of wound healing.

6.1. MAJOR FINDINGS OF STUDY

1. The study shows that the application of aloe vera extract on episiotomy wound was significant in progress of wound healing. All the mothers achieved complete wound regeneration at the time of discharge.
2. The study shows that multi gravid mothers had faster wound healing compared with primi mothers.
3. The study shows that mother weighs between 51-65 kgs had faster wound healing compared with mothers weighs between 46-50 kgs.
4. None of the mothers developed episiotomy wound infection during the interventional period.
5. No adverse reactions were observed during the application of aloe vera extract on episiotomy wound.
6. All the mothers selected for the study co-operated throughout the interventional period.
7. Mothers felt comfort even when no antibiotics and anti-inflammatory drugs has been administered during the interventional period.

6.2. LIMITATIONS

1. There is only an experimental group in this study.
2. The researcher felt inconvenience in sample selection because the duration of hospital stay in normal postnatal women is only 3 days.

6.3. RECOMMENDATIONS

1. A study can be replicated with a larger size for wider generalization of findings
2. A similar study can be conducted in perineal tear and post operative surgical incision clients
3. A follow up study can be conducted to determine the quality of wound healing.
4. A study can be conducted for mothers with diabetes, hypertension and perineal infections, to assess the progress of wound healing with aloe vera extract application.
5. A similar study can be conducted as a true experimental by using control group.
6. A comparative study can be conducted on various alternative and complementary methods.
7. A long term study can be done to identify the impact of aloe vera in prevention of late complications such as, dyspareunia and scarring.

6.4. NURSING IMPLICATIONS

The results of this study have implication in nursing practice, nursing education, nursing administration and nursing research.

6.4.1. Nursing Education

To deliver the nursing care effectively, nursing education must focus on alternative and complementary therapy to enhance the episiotomy wound healing in practice. Hence, application of aloe vera extract on episiotomy wound can be introduced as an alternative therapy in nursing curriculum.

6.4.2. Nursing Practice

Alternative and Complementary methods facilitate the mother to cope with the discomfort and wound healing in shorter duration. The intervention on episiotomy wound enhances the skill and effort of the nurse midwife in monitoring the wound status based on the progress of healing. Hence, the application of aloe vera extract can be made as routine practice among postnatal mothers.

6.4.3. Nursing Administration

When the alternative and complementary therapy advances, the administrator has a responsibility to provide nurses with substantive continuing education opportunities and enable the nurses to update their knowledge in the latest practices. Hence, the administrator can draw a written policies regarding the application of aloe vera extract on episiotomy wound to promote healing and comfort to the postnatal mothers.

6.4.4. NURSING RESEARCH

The study has tested the effect of aloe vera extract in the progress of episiotomy wound healing. Similar studies can be conducted among various types of wounds.

6.5. CONCLUSION

As aloe vera is cost effective, widely available and effective in wound healing the researcher concludes that the nurse midwife should adapt this intervention in her clinical practice to promote the episiotomy wound healing among post natal mothers.

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ANNEXURE - I

Paired 't' test

To test the hypothesis, 't' test was applied to findout the significant progress of episiotomy wound healing by aloe vera extract application.

$$t = \frac{\bar{d}}{\frac{SD}{\sqrt{n}}}$$

$$SD = \sqrt{\frac{\sum (d - \bar{d})^2}{n}}$$

$$\bar{d} = \text{Mean of difference}$$

$$SD = \text{Standard deviation}$$

$$n = \text{Number of samples}$$

ANNEXURE – II

KARL PEARSON'S COEFFICIENT OF CORRELATION

This was calculated to find out the influence of independent variable on dependent variable. Influence of gravida status and weight was assessed through Karl Pearson's Co-efficient of correlation in order to find the significance of relationship between the two variables.

$$r = \frac{\frac{\sum xy}{n} - \bar{x}\bar{y}}{SD_x \cdot SD_y}$$

$$\bar{x} = \text{Mean of first day of wound score}$$

$$\bar{y} = \text{Mean of final day of wound score}$$

$$\frac{\sum xy}{n} = \text{Average of first and final day wound score}$$

$$SD_x = \text{Standard deviation of first day of wound score}$$

$$SD_y = \text{Standard deviation of final day of wound score}$$

APPENDIX – I
PERMISSION LETTER FOR CONDUCTING STUDY



COLLEGE OF NURSING
Sri Ramakrishna Institute of Paramedical Sciences

Educational Service : M/s. S.N.R. Sons Charitable Trust
395, Sarojini Naidu Road, Coimbatore - 641 044, Tamilnadu.
Phone : (0422) - 4500162, 2247756, 4500161, Fax No.(0422) - 2240396,
E-mail : con_sripms_cbe@yahoo.co.in, sriramakrishnacollegeofnursing@gmail.com
Affiliated to The Tamilnadu Dr. M.G.R. Medical University, Chennai,
Approved by Indian Nursing Council, New Delhi and
Recognised by Tamilnadu Nurses and Midwives Council, Chennai.

Prof. Seethalakshmi, B.Sc(N) R.N.,R.M.,M.N.,
Principal

CON/2654/2010

07.06.2010

To

The Joint Director,
Government Head Quarters Hospital,
Krishnagiri.

Sub: Requesting permission for conducting the research study.

Respected Sir,

This student C. Vinodhini doing M.Sc. Nursing II Year in our institution has been allotted for the research study on **“EFFECT OF ALOEVERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS”** under Dr. M.G.R. Medical University. As the main study is to be conducted in the month of June 10th to July 10th, 2010. So, I kindly request you to give permission for the work in research in your hospital. I hereby assure you that we adhere to your hospital rules and regulations.

Thanking you

M. Anandaraman
Nursing Superintendent Gr-II
Govt. Head Quarters Hospital
KRISHNAGIRI-635 001

Seethalakshmi
PRINCIPAL
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044.

From,

M.B. C. Vinodhini
MSc. Nsg Student, SRINIS-CON
Coimbatore.

To Dr. Daggadachari,
Considerable,

The Gynaecologist,
Govt. Headquarters Hospital
Krishnagiri

6/5/10

Respected Madam,

As, I got permission to conduct a
Research study for Effect of Aloe Vera on
Episiotomy wounds among Postnatal mothers in your
well esteemed Hospital. I kindly request you to
spare the antibiotics treatment to my research mothers,
as "Aloe Vera" has a property of Antibiotic, Antifungal,
Antiviral and Anti-inflammatory. So, kindly do the
needful for me. I am grateful to you.

Thanking you,

Yours faithfully,

(C. Vinodhini)
(C. Vinodhini)

Malyi
6/5/10
04.05.10
Krishnagiri

FORMAT FOR CONTENT VALIDITY

Name of the expert : Prof. Sheeba

Address : Mrs. Sheeba, MSc. Neg
Associate Professor
K.G. College of Nursing
Coimbatore

Total content for the tool : Adequate/ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1			✓	
2.	Section - 2		✓		
3.	Section - 3		✓		

Date: 5/06/10

Signature of the Expert

FORMAT FOR CONTENT VALIDITY

Name of the expert : Prof. Sheeba

Address : Mrs. Sheeba, MSc. Neg
Associate Professor
K.G. College of Nursing
Coimbatore

Total content for the tool : Adequate/ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1			✓	
2.	Section - 2		✓		
3.	Section - 3		✓		

Date: 5/06/10


Signature of the Expert

FORMAT FOR CONTENT VALIDITY

Name of the expert : MRS. S. RENUKA.
ASSOCIATE PROFESSOR
Dept. of. OBGY NSG.
Address : KMCH COLLEGE OF NURSING
KMCH CAMPUS
AVINASHI ROAD
COIMBATORE.

Total content for the tool : ☒ Adequate/ ☐ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1		<input checked="" type="checkbox"/>		
2.	Section - 2		<input checked="" type="checkbox"/>		
3.	Section - 3		<input checked="" type="checkbox"/>		

Date: 3/6/10


Signature of the Expert

FORMAT FOR CONTENT VALIDITY

Name of the expert : Ms. CHARMINI JEBAPRIYA.

Address : PRINCIPAL,
TEXCITY COLLEGE OF NURSING,
PODANUR MAIN ROAD,
PODANUR,
COIMBATORE - 23.

Total content for the tool : ☒ Adequate/ ☐ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2.	Section - 2	<input checked="" type="checkbox"/>			
3.	Section - 3	<input checked="" type="checkbox"/>			

Date: 02.06.10.


Signature of the Expert

PRINCIPAL,
Texcity College of Nursing,
Podanur Main Road, Coimbatore-23

From

Dr.N.Vijayakumar,MS.,
Joint Director of Health Services
Krishnagiri.

To

The Principal,
College of Nursing
Sri Ramakrishna Institute of Paramedical
Sciences
Coimbatore.

To inform all OAG Doctors Sir, NS - 1/10/10 & Propop 10/10
R.No.0533/ E1 / 2010, Dt: 30.04.2010.

and - 45
Sub: Research Study Ms.C.Vinodhini, MSc. Nursing Ist. Year, Sri Ramakrishna College of Nursing, Coimbatore – Requesting Permission for Conduction of Research Study for Effect of Aloe Vera on Episiotomy Wounds – Permission order issued – regarding.

Ref: 1.The Principal, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore Ref.No.CON/2576/2009 dt.31.12.2009

As per reference cited, Permission is granted to undergo Research Study for Effect of Aloe Vera on Episiotomy Wounds among post natal mothers of Clinical Training at this Govt. Headquarters Hospital, Krishnagiri to Ms.C.Vinodhini, MSc Nursing Course Ist Year Student.

Period of Research Study is from 01.05.2010 to 30.06.2010 only.

30.4.2010
Joint Director of Health Services
Krishnagiri.

02/30/10
Copy to the HI.Suptd./RMO, Govt.Hd.Qrs.Hospital, Krishnagiri
Copy to the HOD of O&G. Govt.Hd.Qrs.Hospital, Krishnagiri

Mr. Vinodhini 4/5/10

Nursing Superintendent Gr-II
Govt. Headquarters Hospital
KRISHNAGIRI-635 001

APPENDIX – IV

ஒப்புதல் அறிக்கை:

கிருட்டிணகிரி,
நாள்:

கிருட்டிணகிரி மாவட்டம் மற்றும் வட்டம்/நகரம்/.....

கிராமத்தில் வசிக்கும் திரு.....மனைவி

ஆகிய எனக்கு கற்றாழையின் ரசத்தை எபிசியோடமி (EPISIOTOMY) புண் மீது வைத்து
மருத்துவ சிகிச்சை பெற்று சீக்கிரமாக குணமடையச் செய்வதற்கு எனக்கு பரிபூரண
சம்மதம் என இதன் மூலம் ஒப்புதல் அளிக்கிறேன்.

ஆராய்ச்சியாளர்

சிகிச்சை பெறுபவர் கையொப்பம்

From
C.VINODHINI
Msc. Nursing II year
College of Nursing
Sri Ramakrishna Institute Of Paramedical Sciences
Coimbatore -44

Through
The Principal,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore – 44

To


Prof. Esther John
Principal
Ganga College of Nursing
Coimbatore

Sub: Requisition for Tool Validation – reg.

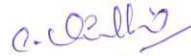
Respected Sir/Madam,

I have selected a project work topic entitled, “EFFECT OF ALOEVERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS IN GENERAL HOSPITAL, KRISHNAGIRI “ for the requirement of Msc Nsg Degree, the following tools are tend to be used. Hence, I request you to kindly give valuable suggestion and necessary modification in the same.

Thanking You,


PRINCIPAL
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044

Yours Faithfully


(C. Vinodhini)
02.06.10

APPENDIX - II

From

C. VINODHINI

M.Sc Nursing II year,

College of Nursing,

Sri Ramakrishna Institute of Paramedical Sciences,

Coimbatore -44.

Through

The Principal,

College of Nursing,

Sri Ramakrishna Institute of Paramedical Sciences,

Coimbatore -44.

To

Mrs. Renuka

Associate Professor,

DEPT. of Maternity Nursing

KIMCH COLLEGE OF NURSING, COIMBATORE

Sub: Requisition for tool Validation-reg.

Respected Sir,

I have selected a project work topic entitled, "**EFFECT OF ALOEVERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS IN GENERAL HOSPITAL, KRISHNAGIRI**" for the requirement of M.Sc Nsg Degree, the following tools are tend to be used. Hence, I request you to kindly give valuable suggestion and necessary modification in the same.

Thanking you,

Yours faithfully,

C. Vinodhini

(C. Vinodhini)

13.5.10

for
[Signature]
COLLEGE OF NURSING
SRIPMS
COIMBATORE-44

From

C. VINODHINI

M.Sc Nursing II year,

College of Nursing,

Sri Ramakrishna Institute of Paramedical Sciences,

Coimbatore -44.

Through

The Principal,

College of Nursing,

Sri Ramakrishna Institute of Paramedical Sciences,

Coimbatore -44.

To

Mrs. Sheeba

Associate Professor,

K.G. COLLEGE OF NURSING

COIMBATORE

Sub: Requisition for tool Validation -reg.


Respected Sir,

I have selected a project work topic entitled, "EFFECT OF ALOEVERA EXTRACT ON EPISIOTOMY WOUND AMONG POSTNATAL MOTHERS IN GENERAL HOSPITAL, KRISHNAGIRI " for the requirement of M.Sc Nsg Degree, the following tools are tend to be used. Hence, I request you to kindly give valuable suggestion and necessary modification in the same.

Thanking you,

Yours faithfully,

C. Vinodhini
02.06.10

for

COLLEGE OF NURSING
SRIPMS
COIMBATORE-44

APPENDIX - III

DESCRIPTION OF TOOL

(PART - A)

1. SOCIO -DEMOGRAPHIC DATA

Sample number :
Age :
Residential area : Urban/Rural
Education :
Occupation :

2. OBSTETRICAL DATA

LMP :
EDD :
Gestational age :
Obstetrical score :
Date and time of delivery :
Type and mode of delivery :

3. MEDICAL HISTORY

Diabetes mellitus/
Gestational diabetes mellitus :
Hypertension / Pregnancy
induced hypertension :

4. PERSONAL HISTORY

Weight : Haemoglobin :
Diet Pattern : Vegetarian / Non-Vegetarian
Personal Hygiene :

PART – B

MODIFIED SOUTHAMPTON SCORING SYSTEM (WOUND HEALING SCALE)

[illegible]

Description:

<20% of wound affected = Serous exudate

20 – 39% of wound affected = Serous exudate and Erythema

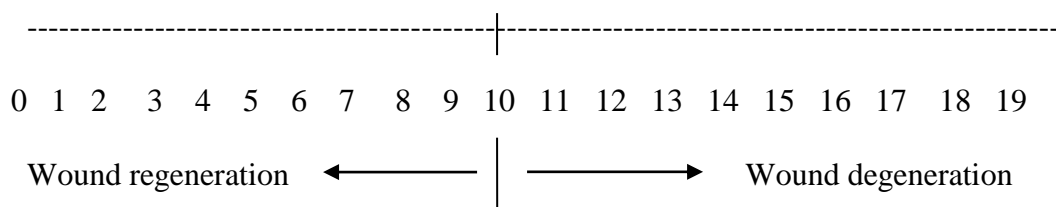
40 – 59% of Wound affected = Purulent exudate

60 – 79% of wound affected = Serous exudates, Erythema, Purulent exudates

>80% of wound affected = Separation of deep tissues

INFERENCE**MODIFIED BATES-JENSEN WOUND SCORE CONTINUUM**

The progress of wound status was assessed by modified Bates-Jensen wound score continuum. The scale has two ends, where less score indicates wound regeneration and high score indicates wound degeneration.

MODIFIED BATES - JENSEN WOUND SCALE

FORMAT FOR CONTENT VALIDITY

Name of the expert : MRS. ESTHER JOHN

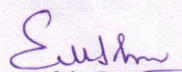
Address : PRINCIPAL
GANGA COLLEGE OF NURSING,

Total content for the tool : Adequate/ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1	✓			
2.	Section - 2	✓			
3.	Section - 3	✓			

Date: 27.06.10


Signature of the Expert

APPENDIX – V

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation, "Effect of Aloe Vera Extract on Episiotomy Wound among Postnatal Mothers in a General Hospital, Krishnagiri" done by C. Vinodhini II year M.Sc Nursing, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore, has been edited for English language appropriateness.

Name : Mrs Jessie Mathew, MAM, MPhil
Designation : Assistant Professor
Name of the Institution : Hindustan College of Arts & Science
Signature : Jessy Mathew

JESSY MATHEW, MAM, M.Phil.
Assistant Professor
Hindustan College
Coimbatore.